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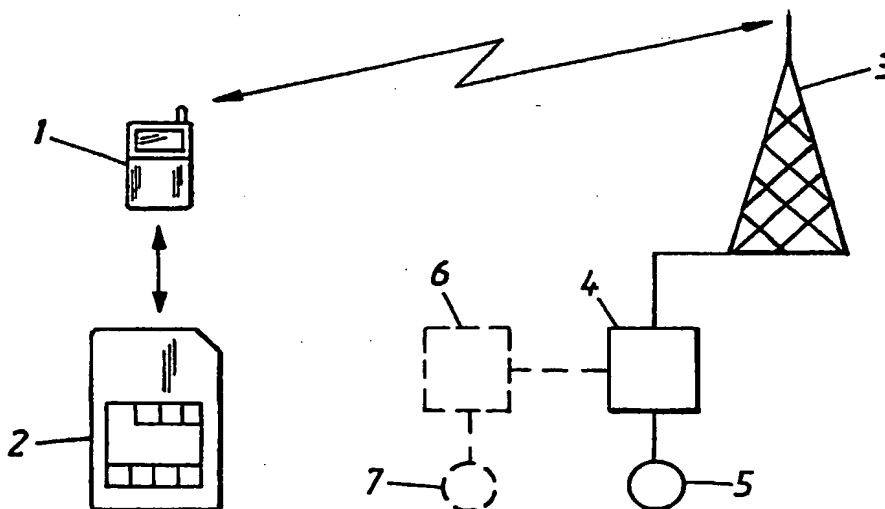
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(54) Title: METHOD OF SECURITY STORAGE OF INFORMATION



(57) Abstract: A method for the safe storage of information contained in a so-called SIM card for mobile telephony, particularly information relating to a so called telephone book with affiliated information relating to telephone numbers and the owner of the book, said telephone book being stored in a memory belonging to the SIM card and having been created by the owner of said SIM card. The invention is characterised by causing the SIM card (2) to transfer the information content of the telephone book to a computer (4; 6) with a memory (5; 7) belonging to said computer at predetermined time intervals or in connection with predetermined events via a mobile telephone system (1, 3, 4, 5), for safe storage of said information content; and by causing said computer (4; 6) to transfer said information content to a new SIM card that replaces the first-mentioned SIM card (2) via said mobile telephone system and in accord with a request signal.

WO 01/62029 A1

METHOD OF SECURITY STORAGE OF INFORMATION

The present invention relates to a method for the safe storage of information, more particularly to information contained in a SIM card (Subscriber Identity Module card) for mobile telephony.

A SIM card for mobile telephony includes a processor and a memory for storing diverse information and for performing certain calculations and controlling certain functions. The identity of the subscriber IMSI (International Mobile Subscriber Identity) is stored in the SIM card, together with other information. IMSI is used in the co-action of the mobile telephone with the mobile telephone system of a network operator. A SIM card memory also contains the telephone book of the user, i.e. telephone numbers stored by the user.

Available data and the results of investigations show that up to 15% of mobile telephone owners lose their telephones each year. This loss is either due to theft or carelessness.

When a mobile telephone is lost, the SIM card is also lost, since it is normally placed in the mobile telephone. The person losing his/her telephone will thereby, of course, also lose the information stored in the SIM-card memory, including the telephone book.

Today a new SIM card can be obtained fairly quickly from a network operator, and also a new telephone can be purchased. However, the user of this type of telephone is often used to referring to the telephone book when making a telephone call. The user is not always aware of the telephone number he/she wishes to call and cannot, therefore, make the call at that time despite having access to a telephone and to a SIM card.

It is therefore desirable to be able to recreate the telephone book as quickly as possible.

The present invention satisfies this desideratum.

Accordingly, the present invention relates to a method for the safe storage of information that has been stored in a so-called SIM card for mobile telephony, particularly a so-called telephone book containing information relating to telephone numbers and their owners, said telephone book being stored in a memory belonging to the SIM card and being created

by the owner of said card. The present invention is characterised in that the information content of the telephone book is caused to be transferred to a computer or corresponding device for safe storage at certain predetermined time intervals or subsequent to given events, via a mobile telephone system; and that said computer is caused to transfer said information content to a new SIM card that replaces the first-mentioned SIM card in response to a request signal and via the mobile telephone system.

The invention will now be described in more detail partly with reference to an exemplifying embodiment thereof shown on the accompanying drawing, in which

- Figure 1 is a diagrammatic illustration of the invention.

Figure 1 is a diagram that illustrates the invention. Reference numeral 1 identifies a mobile telephone, reference numeral 2 identifies a SIM card, reference numeral 3 identifies a base station belonging to a network operator, reference numeral 4 identifies the network operator computer for telephone traffic, and reference numeral 5 identifies a database belonging to the computer 4. Reference numeral 6 identifies an external computer and its associated database 7.

The inventive method relates to the safe storage of information contained in a so called SIM card for mobile telephony, particularly a so called telephone book that contains information relating to telephone numbers and their owners, said telephone book being stored in a memory belonging to the SIM card and having been created by the owner of the SIM card.

According to the present invention, the SIM card is caused to transfer the information content of the telephone book to the affiliated memory of a computer at predetermined time intervals for safe storage of said information, via a mobile telephone system. The computer is caused to transfer said information content to a new SIM card replacement in response to a request, via a mobile telephone system.

This method thus enables the telephone book in the SIM card to be stored securely also at another location from which the contents of the telephone book can be transferred to another SIM card.

In the event of a customer losing his/her telephone or SIM card, the customer is able to obtain a new telephone and a new SIM card and then transfer to the new SIM card the telephone book stored in said other location.

- 5 Consequently, the owner is able to quickly ring a desired telephone number without first needing to find all relevant telephone numbers and insert these numbers into the new SIM card. This facility is also available to the network operator in addition to the user.

- 10 According to one preferred embodiment of the invention, the computer 4 belongs to the network operator that issued the first-mentioned SIM card.

According to another embodiment, the computer 6 belongs to an external operator.

- 15 According to a highly preferred embodiment, the telephone book is tied in the computer to the IMSI of the SIM card concerned. This is preferred because IMSI is unique to each SIM card the world over. By tying the stored telephone book to the IMSI of the SIM card, it is possible to establish which person has a subscription with a SIM card that carries a given IMSI.

- 20 In the event of a SIM card being lost, the owner of the card can contact the operator or an authorised store or shop and there give his name and mobile telephone number and ask to be issued with a new SIM card, and then, of course, with a new IMSI.

- 25 The operator can therewith enter this data into the computer 4, 6, wherewith the computer checks whether or not the data, or information, entered is correct and also which IMSI belonged to the lost SIM card. Providing that the data entered into the computer is in agreement with the data stored therein, the computer 4 of the operator can be instructed, via the telephone network, to send the telephone book to the new SIM card, via the mobile telephone network, and store said telephone book in the database of the computer 4
- 30 together with the IMSI of the new SIM card. The telephone book is then no longer tied to the IMSI of the lost SIM card. Transfer of the telephone book takes place in response to a call to a special number that leads to the operator from a telephone containing the new SIM card.

Corresponding procedure can be effected with an external computer 6. In this case, it is beneficial when the external computer 6 co-acts with the network operator computer, in respect of obtaining subscription information and information that a new SIM card has replaced a lost SIM card.

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According to one preferred embodiment, security against an unauthorised person having access to a telephone book is further enhanced by not transferring said information content to a new SIM card from said server or from said network operator computer until a personal code belonging to the owner of the old SIM card has been entered into the

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computer 4; 6.

The telephone book can be transferred from a mobile telephone to said computer in different ways. For example, the owner may call a special telephone number, whereafter the computer asks for the telephone book stored in the SIM card of the calling telephone.

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It is preferred, however, that when the mobile telephone is activated in the telephone system, the network operator computer will automatically call up the mobile telephone and request the a transfer of the telephone book, this request being made at given time intervals or subsequent to given events. This time interval may be once a week, for instance. With

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regard to events, a request for the telephone book may be sent after each one-hundred calls made on the mobile telephone.

It will be evident that the present invention solves the problem recited in the introduction.

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Although the invention has been described with reference to a number of exemplifying embodiments, it will be understood that these embodiments may be varied by one skilled in this art with respect to when information shall be transferred, etc. It will also be understood that other information stored in the SIM card can be transferred in a similar way, for instance information concerning personal services, etc.

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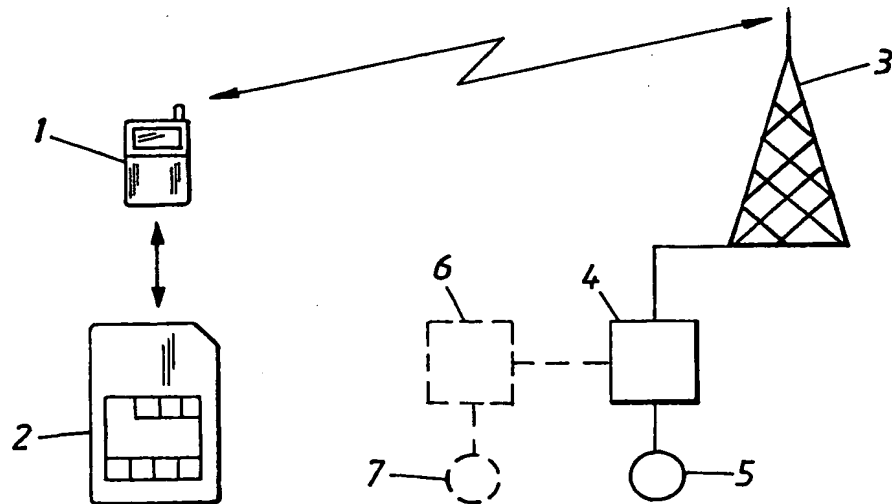
The invention shall therefore not be considered to be limited to the aforescribed exemplifying embodiments thereof, since variations can be made within the scope of the accompanying Claims.

CLAIMS

1. A method for the safe storage of information contained in a so called SIM card for mobile telephony, particularly information relating to a so called telephone book with
5 affiliated information relating to telephone numbers and the owner of the book, said telephone book being stored in a memory belonging to the SIM card and having been created by the owner of said SIM card, **characterised** by causing the SIM card (2) to transfer the information content of the telephone book to a computer (4;6) with a memory (5; 7) belonging to said computer at predetermined time intervals or in connection with
10 predetermined events via a mobile telephone system (1, 3, 4, 5), for safe storage of said information content; and by causing said computer (4; 6) to transfer said information content to a new SIM card that replaces the first-mentioned SIM card (2) via said mobile telephone system and in accord with a request signal.
- 15 2. A method according to Claim 1, **characterised** in that the computer (4) belongs to the network operator that issued the first-mentioned SIM card.
3. A method according to Claim 1, **characterised** in that said computer (6) belongs to an external operator.
- 20 4. A method according to Claim 1, 2 or 3, **characterised** in that the telephone book is tied in said computer (4; 6) to the IMSI of the SIM card in question.
5. A method according to Claim 1, 2, 3 or 4, **characterised** in that when the mobile
25 telephone (1, 2) is activated in respect of the telephone system, the computer (4) of the network operator functions to call the mobile telephone and request transfer of the telephone book.
6. A method according to Claim 1, 2, 3, 4 or 5, **characterised** by causing said transfer
30 of said information content to a new SIM card from said computer (4; 6) only after a personal code belonging to the owner of the old SIM card has been entered into the computer.

1 / 1

Fig. 1



INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 01/00297

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: H04Q 7/32

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: H04Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 9927721 A1 (SWISSCOM AG), 3 June 1999 (03.06.99), page 11, line 5 - line 32; page 7, line 30 - page 8, line 22, figure, abstract --	1-6
X	WO 9927730 A1 (SWISSCOM AG), 3 June 1999 (03.06.99), page 4, line 24 - page 5, line 18; page 10, line 7 - page 11, line 3, figure --	1-6
X	DE 19848364 A1 (SLEMBECK, FRANK), 12 August 1999 (12.08.99), the whole document	1-3
A	--	4-6

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 9858510 A1 (SWISSCOM AG), 23 December 1998 (23.12.98), page 13, line 21 - line 31, figures, abstract -- -----	1-6

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Information on patent family members

28/05/01

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